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Application No.: 09/989,414
Art Unit 2627

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Amendments to the Claims

1. (Currently Amended) A tilt controlling method comprising the steps of:
detecting a ~~track~~ trace of a focus error at the maximum value of an RF signal or at the minimum value of jitter when a focus is on;
detecting the maximum value and the minimum value of the focus error; and
calculating a variation per physical track of the focus error by using the maximum and minimum values of the focus error to control the tilt using the variation.
2. (Currently Amended) The tilt controlling method according to claim 1, further comprising the step of calculating a variation per physical track of the maximum value and the minimum value of the focus error to detect a normalized DC component.
3. (Currently Amended) The tilt controlling method according to claim 2, wherein a tilt reference is varied as much as the variation per physical track to control the tilt.
4. (Canceled)
5. (Currently Amended) The tilt controlling method according to claim 1, wherein said step of calculating a variation per physical track of the focus error to control the tilt using the variation comprises the steps of:
calculating the variation per physical track of the focus error;

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detecting a surface vibration from trembling of a disk; and
normalizing the variation per physical track of the focus error and the surface vibration to
control the tilt.

6. (Original) The tilt controlling method according to claim 5, wherein a normalized
value and a reference value due to tilt initialization are considered to control the tilt.

7. (Currently Amended) The tilt controlling method according to claim 6, wherein the
reference value due to tilt initialization is obtained from an FE ~~track~~ trace at a point where an RF
envelope peak has the maximum value or a jitter has the minimum value.

8. (Previously Presented) The tilt controlling method according to claim 5, wherein a
normalized value is proportional to time in a case of constant linear velocity.

9. (Previously Presented) The tilt controlling method according to claim 5, wherein a
normalized value is proportional to length in a case of constant angular velocity.

10. (Canceled)

11. (Currently Amended) A tilt controlling apparatus of an optical record medium,
comprising:

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a RF and servo error producing unit for producing RF and servo error signals from an electric signal outputted from an optical pickup unit;

a servo controlling unit having a tilt error detecting and controlling block for receiving RF and focus error signals outputted from said RF and servo error producing unit to produce DC and AC values about ~~the~~ a tilt initialization and about an optical disk; and

a servo driving unit for controlling said optical pick-up unit in response to a signal of said servo controlling unit,

wherein said tilt error detecting and controlling block includes:

a RF peak detecting block for detecting the peak of an RF envelope;

a detecting block for detecting the maximum and minimum values of a focus error per one rotation of a disk; and

a tilt controlling block for controlling the tilt using the RF signal and an FE signal calculated by using the maximum and minimum values of the focus error.

12-20. (Canceled)

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